

Amendments to the Claims

1. (Currently amended) A method for making a hypermutable cell, comprising the step of: introducing into a plant cell a polynucleotide comprising a dominant negative allele of a mammalian PMS2 mismatch repair gene, whereby the cell becomes hypermutable.

2. (Original) The method of claim 1 wherein the polynucleotide is introduced by transfection of a suspension of plant cells *in vitro*.

3-4. (Withdrawn)

5. (Currently amended) The method of claim 1 wherein the mismatch repair gene is a mammalian human PMS2.

6-14. (Withdrawn)

15. (Currently amended) The method of claim 5 ~~1~~ wherein the allele comprises a truncation mutation.

16. (Original) The method of claim ~~15~~ 5 wherein the allele comprises a truncation mutation at codon 134.

17. (Currently amended) The method of claim ~~16~~ 15 wherein said allele is a human PMS2, and wherein the truncation ~~mutation~~ is due to a thymidine at nucleotide 424 of wild-

type human *PMS2*.

18. (Currently amended) The method of claim 1 wherein the polynucleotide is introduced into a plant cell of a plant seedling ~~in a plant to form a transgenic plant~~.

19. (Currently amended) The method of claim 18 further comprising: growing ~~the transgenic said plant seedling into to form~~ a mature ~~transgenic~~ plant.

20. (Currently amended) The method of claim 19 wherein the mismatch repair gene is human *PMS2*.

21. (Canceled)

22-30. (Withdrawn)

31. (Original) The method of claim 20 wherein the allele comprises a truncation mutation.

32. (Original) The method of claim 20 wherein the allele comprises a truncation mutation at codon 134.

33. (Currently amended) The method of claim 20 wherein said human *PMS2* comprises a ~~the truncation mutation is~~ due to a thymidine at nucleotide 424 of wild-type ~~h~~*PMS2* human

PMS2.

34. (Currently amended) A homogeneous composition of cultured, hypermutable, plant cells which comprise a dominant negative allele of a mammalian PMS2 mismatch repair gene.

35. (Currently amended) The homogeneous composition of claim 34 wherein the mismatch repair gene is a human PMS2.

36. (Canceled)

37-45. (Withdrawn)

46. (Currently amended) The homogeneous composition of claim 34 wherein the cells express a protein consisting of the first 133 amino acids of ~~hPMS2~~ human PMS2.

47. (Currently amended) A hypermutable transgenic plant wherein at least 50% of the cells of the plant comprise a dominant negative allele of a mammalian PMS2 mismatch repair gene.

48-55. (Withdrawn)

56. (Currently amended) The hypermutable transgenic plant of claim 47 ~~comprising a protein which consists of~~ wherein said dominant negative allele encodes the first 133 amino acids of human ~~PMS2~~ PMS2.

57-76. (Withdrawn)

77. (Currently amended) A hypermutable transgenic plant made by the method of claim ~~67~~ 19.

78. (Canceled)

79. (Original) The hypermutable transgenic plant of claim 77 wherein the mismatch repair gene is human *PMS2*.

80-82. (Withdrawn)

83. (Original) The hypermutable transgenic plant of claim 77 wherein the allele comprises a truncation mutation.

84. (Original) The hypermutable transgenic plant of claim ~~77~~ 79 wherein the allele comprises a truncation mutation at codon 134.

85. (Currently amended) The hypermutable transgenic plant of claim ~~83~~ 79 wherein said

human PMS2 comprises a ~~the~~ truncation ~~mutation~~ due to is a thymidine at nucleotide 424 of
wild-type human PMS2.

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86-125. (Withdrawn)
